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The U.S. Government's Global Hunger & Food Security Initiative

Songhai Centers as Models for Promoting Sustainable Agriculture

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Executive Summary

Father Godfrey Nzamujo founded Songhai in Benin in 1985 and still serves as the center's director. Since that time, the organization has created six centers across Benin and 11 centers in Nigeria. With support from the United Nations and other numerous partners, the "Songhai model" is being replicated in other West African countries like Liberia, Sierra Leone, and the Republic of Congo. More than 200 people are employed as technicians, facilitators, and administrators in the centers across Benin alone.

The Songhai Centers are designed for training, production, research, and development of sustainable agricultural practices as a means to create "decent" jobs for youth and women. As part of the extended marketing strategy, the Center Porto-Novo maintains a restaurant and store with additional satellite stores located throughout the country. The Songhai Centers in Benin alone receives more than 4,000 visitors each year, and thus, becoming an agritourism center that welcomes the general public and government dignitaries from across the world.

The sizes of the Songhai Centers across the West African sub-region range from 10-800 acres. The facilities are used for production agriculture as well as for research, educational, processing, manufacturing, and marketing activities. The Songhai training design includes both classroom instruction and field practicum that provides its graduates with the practical expertise to become successful farmers. The centers also work with local institutions of higher learning and provide practical agricultural experiences for university students.

The centers constantly update curriculum and training materials through collaboration with local universities. The resulting modules cover core agricultural practices and incorporate some of the traditional local production practices. In the future training in leadership, entrepreneurial and business planning, as well as training relevant for the managing of agricultural facilities such as carpentry, masonry, electrical, and plumbing, will be offered.

Father Nzamujo recognizes that providing support to Songhai Center graduates remains a challenge and that to become successful entrepreneurs graduates need financial and market support, as well as inputs and assets to help operate a farm (e.g., seed, feed, live-stock, and equipment).

In Benin and Liberia the agricultural sector contributes significantly to the economies, yet most of the farmers still operate at the subsistence level. The Songhai Center approach sets a novel paradigm in that they focus on market orientation on the basis of sustainable production practices.

Introduction

In summer 2012 a team from North Carolina A&T State University carried out a comparative study of the Songhai Centers in Porto-Novo, Benin, and in Bensonville, Liberia, as a means to document good practices or impactful projects that facilitated the transfer of new technologies to farmers. The objective was to learn how the Songhai Center's training model for sustainable agricultural development could be applied and adopted in other parts of the world. The case study relied primarily on personal interviews with

people who work at or are affiliated with the Songhai Centers in Benin and Liberia.



Source: www.mapsofopen.com/liberia-map.html



Source: www.mapsofopen.com/benin-map.html

With increasing populations, countries are being challenged to meet the future food security needs of their people when the majority of their farmers produce at subsistence levels.

According to the World Bank (2013), Benin has roughly nine million inhabitants, while Liberia has an estimated four million. The GDP per capita for Benin is \$802 and \$347 for Liberia. The economies of both Benin and Liberia remain underdeveloped and agriculture continues to be the key sector. In Benin, agriculture accounts for 39.5 percent of the GDP (World Bank, 2013; CIA, 2012); in Liberia it is approximately half of the GDP in the post-war period. Rainfed rather than

irrigated agriculture dominates with the main growing season corresponding to the May-August rainy season. Structural problems in the agricultural sector such as lack of modern farming technologies, poor soil conditions, and weak post-harvest infrastructure (storage, preservation, processing, etc.) exacerbate food security problems (World Food Program 2013).

Women comprise on average 50 percent of the labor force in agriculture in sub-Saharan Africa (FAO 2012). They also generate two-thirds of Africa's agricultural production and participate in trade and processing. Although they make significant contributions to the rural economy, women consistently have less access than men to the resources and opportunities they need to be more productive.

The Songhai Center in Porto-Novo, Benin, was founded in 1985 by Father Godfrey Nzamujo, and he is the center's director to date. Porto-Novo is the capital city of Benin, with 450,000 inhabitants. Father Nzamujo's innovative design is seen throughout the Porto-Novo center and the other satellite centers. The Songhai Center strives to exist via its own efforts and to partially finance its programs from revenues generated by its own activities.

Nonetheless, external support has been a critical factor to the parent center's success. The United Nations Development Program (UNDP), along with USAID and other partners¹, has been cited as a principal partner among other partners on several Songhai investment projects. The Songhai Center also received support from USAID Benin and International Development Research Centre (IRDC) in 1998 to help create the Community Networking Service Centers (CNSCs or better known as "CyberSonghai") at that time in three sites (Porto-Novo, Savalou, and Parakou). Other sites were later added – Lokossa, Kinwedji and Kpomasse, as well as the Delta state of neighboring Nigeria. Through the CNSCs, the sites received networking, computer training, and internet access; this ability, in turn, allowed them to provide distance education to farmers, young entrepreneurs, and other residents in rural communities. Rural communities also benefit from the

¹ In 2012, the Government of Benin signed a funding agreement with UNDP, for the amount of \$51 million (US) to strengthen and create new centers throughout the country. This amount is in addition to funding of 1.5 million dollars received from UNDP as part of its 2009–2013 program. Other partners that have contributed to development of Songhai include: Songhai France, UN Refugee Agency, *Cooperation Francaise*, Rabobank Foundation and a host of local and regional governmental, non-governmental institutions, and international agencies and groups.

CNSCs in that they also have an opportunity to communicate and exchange information with each other.

Another USAID contribution to the Songhai Centers in Benin was the USAID funded Project Soya (1980), administered by Catholic Relief Services. This project introduced soybeans as a nutritional supplement to the local staple. The project provided farmers with nutrition education and training in how to grow soybeans and incorporate soymeal into local foods. The soybean variety Jupiter (imported from the United States) was distributed to farmers. Today the Benin Songhai Centers are some of the beneficiaries of Project Soya because soybeans (Jupiter variety) remain one of the main crops grown and processed at the centers (Nzamujo, 2012).

In 2005, UNDP rallied four other United Nations agencies (IFAD, UNIDO, FAO, and ILO²) to form a multi-partner initiative around Songhai to enhance its technical and organizational capacities and eventually incorporate its approaches into their development programs elsewhere in Africa.

In 2006, USAID/Liberia, along with the United Nations Development Program (UNDP), provided support to Father Nzamujo and the Republic of Liberia to explore the possibility of setting up Songhai centers in that country. USAID also is as a member of Centre Songhai Liberia Initiative's steering committee, which is also known as the Liberian Rural Development Partnership Initiative. The Centre Songhai Liberia Initiative (CSLI) operates under the auspices of the Ministry of Youth and Sports. This ministry provided the land and buildings for the center because the program's target audience includes youth.

Methodology and Approach

The research design for this paper includes the case study approach to explain how the center works as a sustainable agriculture model and the feasibility of using this model in other West African countries.

According to Yin (2009) as noted in his book, *Case Study Research: Design and Methods*, case studies are an appropriate research technique. The project team developed a formal protocol that included standard questions for personal interviews. Secondary data on the economic structure of the area from the World

Bank, United Nations, etc. were used to develop country profiles.

There appears to be a plethora of reports and observational accounts on the Songhai Center. Much of the country and Songhai history and background is not included in this report; however, it is available at the Songhai Web site (www.songhai.org) and from other sources. This case study relies mainly on personal interviews with people who work at or are affiliated with the centers in Benin (Porto-Novo), Benin (Savalou) and Liberia (Bensonville). Project personnel toured each site and spoke with Songhai employees, local governmental officials, representatives from non-governmental organizations, and official US agency representatives. In Benin, the project team traveled to Cotonou, Porto-Novo and Savalou during the onset of the rainy season. In Liberia, the project team traveled to Monrovia and Bensonville. Because of the rainy season, traveling to other regions in Liberia and Benin was impractical.

The Songhai Centers in Benin and Liberia

CENTRE SONGHAÏ IN PORTO-NOVO, BENIN

The Songhai Centers were designed for agricultural training, production, research and development of sustainable agricultural practices. These centers operate on the interrelationships between environmental resources and recycling based upon biologically and ecologically sound agricultural practices. The centers operate as "working" teaching and research farms with facilities for processing and marketing products such as cooking oils, fruits, juices, preserves, vegetables, meat, eggs, poultry, and fish. All centers also develop and experiment with technologies that aid their ability to produce goods and services. Local communities and individual trainees benefit from the centers because they can learn how to efficiently use local social and natural resources and adopt the production, processing, and marketing activities that are most profitable for them.

The Songhai Center Benin operates its headquarter center in Porto-Novo in the southern region of the country. The five other satellite centers in Savalou, Parakou, Kinwedji, Kpomasse, and Lokossa are located in other agricultural zones. The Songhai Center Porto-Novo sets a standard in innovation and includes a computer laboratory and facilities to manufacture biogas and solar energy. As part of the extended marketing strategy, the Center Porto-Novo maintains a restaurant, store, and one telecenter on site. Much of the strategic decisions are made here. This center

² IFAD (International Fund for Agricultural Development); UNIDO (United Nations Industrial Development Organization); FAO (Food and Agricultural Organization); and ILO (International Labor Organization)

undertakes more research and training activities than other sites and thus is able to backstop activities for satellite centers as needed. It also serves a draft. The Songhai Center Porto-Novo has become an agritourism center welcoming the general public as well as governmental dignitaries from across the world. The Songhai Center, recognized as the “Excellence Center” by the United Nations since 2008, plans to expand across the continent (Lekoto, 2012).



Photo 1. Agricultural production at Songhai: field crops, vegetables, tubers and animals. Source: J. Owens

The Songhai Center Porto-Novo covers 60 acres, which includes fields, classrooms, laboratories, processing and meat smoking facilities, warehouses, fish ponds, animal and poultry units, cold storage units, machinery/equipment shop, bakery, restaurants for students and guests, a store, dorms, and guest house. The center also hosts an Internet Café (free for students). More than 200 people work at the center in the various functions, including education, production, machinery/equipment manufacturing, processing, and marketing (Chima, 2012).

The Songhai store sells products that are produced at the center, such as jams, vegetables, fruits, puree, syrups, fruit drinks, gari, tapioca, soybean oil, soy enriched cookies, palm oil, and soap. The center also sells fresh fish, poultry, and other livestock. The meat is served in the center’s restaurant. The center produces rice that is sold domestically under the Songhai brand. The products sold in the Songhai store in Porto-Novo are also available throughout the year at other Songhai Centers (satellites) and at other retail outlets in major cities (Chima, 2012). The center supports its daily activities and expenses from the revenue generated from the products and services. The Porto-Novo center follows the integrated model during the production process. For example, food waste from the restaurant

feeds the fish, animals and poultry. Wastewater flows into lagoons where plants purify the water. Manure from the animal and poultry units produces natural fertilizer; biogas powers the generators for the machinery to process vegetables and fruits. Maringa trees are grown for shade and also produce leaves that become feed for animals, layers, and fish. The soybeans produce oil and meal with the residue used for animal/poultry feed. According to Mr. Chima “Without the soybean wastes, animal production would not be possible at Songhai Center.”

The Songhai Center trains at least 200 participants each year and has a waitlist for admission (Chima, 2012). Beninese citizens who enroll in agricultural training at the center are offered tuition-free training, food and accommodations.



Photo 2. Integrated production system at Songhai. Source: M. Eley

Songhai Center Porto-Novo offers two training sessions: six months and eighteen months long. During the eighteen-month session, students have the advantage of experiencing every training section at Songhai. The center’s training model is based on the practical aspect: learning by doing using hands on approaches. This is contrasted with the African “classical instruction method,” in which “students learn the theory but not the practical application” (Lekoto, 2012).

The Songhai Center targets socially disadvantaged youth who do not have financial means and then trains them to become integrated agriculture experts who create profitable enterprises capable of supporting themselves and their families (Lekoto, 2012). The Songhai Center also provides limited financial aid to help graduates acquire land to undertake agricultural production.

The Songhai Center in Savalou is one of five satellite centers located throughout Benin. The site at Savalou is

located approximately 150 miles northwest of Porto-Novo and lies in the geographic center of the country from north to south. The site is usually easily accessible by road from Cotonou and Porto-Novo but at times the main road is not passable, requiring a three-hour detour. Songhaï Savalou promotes the goal of training youth in agriculture development and conducting research. During the year, this center trains three classes with approximately 25-30 students and three interns.



Photo 3. A variety of juices are produced at the Songhaï Center-Porto Novo and marketed throughout Benin.

Source: J. Owens

The Savalou Center has 617 acres allocated crop production (cereals, maize, soybeans, cassava, carrots, peppers, okra, and yams) and to livestock (rabbit, pigs and poultry). The production mix is based upon (1) the training requirements for trainees, (2) the season that fits the crop production cycle, and (3) the crop rotation cycle. The center has installed a pump that can provide limited irrigation for select crops during the dry season.

The center uses three 'natural' fertilizers: (1) manure from cattle, (2) manure from the poultry houses, and (3) chopped leaves from the Leucena tree. To determine if the soil needs more nutrients, the yields are measured and compared to other fields or previous years. The center does not have access to soil test kits or a laboratory to analyze soil samples. The center also does not use chemical pest control methods due to costs and lack of access to supplies.

The Savalou Center maintains 100 milk cows, 3 bulls, 15,000 layers, 3,000 other birds (turkeys, guinea fowl), and 700 pigs (Boko 2012). According to the Savalou Coordinator, more than half of the production from Savalou is sent to the Center Porto-Novo. The Savalou Center's production also includes cassava and its byproducts, gari and tapioca.

Songhaï Porto Novo Success Story



Mr. Romain Migan came from a poor family in Bénin and lacked adequate funds to attend the university. According to Mr. Migan, "When I told my family that I wanted to go to school to study agriculture at Songhaï - Porto Novo, for them agriculture equals poverty." For his family, "It was a wasteful investment sending me to school." When he was taking classes at Songhaï, neither of his parents ever visited him, and no family member attended his graduation, "I was alone."

Today Mr. Migan is a successful farmer and currently trains six students and supports his widowed mother and his brother. "Today my family is very proud of me."

After graduating from the Songhaï Center – Porto Novo he received a Songhaï loan for 2.5 million CFA (\$5,000 US) and cultivates tomatoes, onions, and carrots on five hectares; he plans to expand his gardens to 40 hectares. His marketing strategy focuses on the neighboring markets where he sells his vegetables in bulk to contacts in each county when the season is favorable to maximize profit. He also modified his selling strategy and now only sells by weight (per kilogram) instead of by volume (basket).

"To me the most important unit of my Songhaï training was the garden vegetables because of the small amount of capital required to start a business." Based on the training "I did make a better life for myself."

CENTRE SONGHAÏ LIBERIA IN BENSONVILLE

Mr. Christopher Fayia serves as the National Project Coordinator at the Centre Songhaï Liberia Initiative (CSLI) in Bensonville. This initiative was designed in 2009 as a broad multi-partnership program that would expand the access of youth and young adults to entrepreneurial training and research on sustainable agricultural practices in the Mano River sub-region of West Africa³. This region has been devastated by years of civil war. Presently, the main (hub) site for CSLI is

³ The countries of this sub-region include Liberia, Sierra Leone and Guinea.

located in the Bensonville/Fendell area, serving mainly Liberia's most populous county, Montserrado. CSLI is designed to replicate many of activities from the Centre Songhai Porto-Novo in Benin and function as a "model" farm for the training program serving the rural areas near Monrovia.

CSLI opened in the fall of 2010. Two satellite centers were opened as well – one in Bpolou (Gbarpolu), which is northwest of Bensonville and provides technical backstopping for the Central Agricultural Research Institute (CARI)⁴. The other center in Harper (Maryland) focuses on training and research pertaining to rubber trees. At least five satellite campuses, which will be regionally based to support farmers throughout the country, are scheduled to open.

Presently, the four elements CSLI operations include: (1) agricultural production, (2) training, (3) creation of a producer network, and (4) support and follow-up activities and services. The center's production activities resemble the Benin model, namely aquaculture, vegetable crops, and livestock (e.g., pigs, rabbits, layers, broilers, and ducks). The processing units include bread, palm oil, and soap. The machine shop produces some agricultural equipment such as rice hullers, and though not fully operational, the rice processing area will support local farmers in the area. The Benin hub recently provided CSLI with feed mixing machines, juice production machines, and incubators for hatching eggs. With these juice production machines, the center hopes to process raw materials (fruits and vegetables) into value added products (juices and jams).

The center's training department is responsible for teaching plans and course curricula. CSLI completed the first full cycle of training in April 2012, training more than 100 farmers (26 percent female and 74 percent male) during the eight-month period. This training cycle also included three months in the field. The training department considered offering shorter, tailor-made courses for the next cycle based upon the first year experiences and input from Father Nzamujo and the CSLI Board. It was recommended that the Center spend six months developing the production site and suspend training.

There is an urgency to elevate the standard in the center to provide more support for graduates so they can become successful entrepreneurs. Father Nzamujo recognized that providing support to center graduates remains a challenge; nonetheless, the center feels it is

important to support the graduates adequately with financial and market support, as well as input costs to help operate a farm (e.g., seed, feed, equipment, and livestock). Future training sessions will also focus on more specialized training in leadership, entrepreneurship, and business planning (Fayia, 2012).

Development of Curriculum/Training Materials: With respect to the development of training modules, two consultants from Benin worked with individuals from the University of Liberia in Fendell (Montserrado), Booker Washington Agricultural and Industrial Institute (BWI) in Kakata (Margibi) and other agricultural support institutions. The resulting modules cover core agricultural practices at Songhai Center and also incorporate some of the traditional, local production practices. Changes to curriculum content will emphasize more skill acquisition in such skills as carpentry, masonry, electricity, and plumbing. Therefore, trainees will not only learn agricultural production techniques, but also methods for managing agricultural facilities. The Songhai program also provides enterprise development training under the general training curriculum and includes basic calculations, record keeping, basic business principles, and breakeven analysis (Fayia, 2012).

Training Team: The Centre Songhai Liberia recruited 30 trainers from various agricultural colleges who then received intensive training at the Songhai Center in Benin. The training included different production models and hands-on production techniques, as well as pre- and post-production support. However, with the delays in funding and establishing the Liberia Center, only thirteen trainers remained at the center and were divided into three production units – crops, livestock and food processing. The training design relied on "real" practical (hands-on) training and not just the formal classroom training that many of the agricultural colleges/universities provide. To add to the training expertise of the center, five technicians will be arriving from China under the "South-South Cooperation"⁵ and will spend two years training in fish, vegetable, and crop production (Fayia, 2012).

⁴ According to Liberia's Ministry of Agriculture's website, Central CARI is the only Liberian Government owned and operated research entity on agricultural matters.

⁵ According to the United Nations (2011), the South-South cooperation is a framework that originated with a UN General Assembly resolution of December 19, 1978, calling for technical cooperation among developing countries (TCDC). It is organized and managed by developing countries themselves and it offers opportunities for people within these countries to share knowledge and experience, training, technology transfer, financial and in-kind contributions as they seek to pursue sustained economic growth and sustainable development (United National Office for South-South Cooperation, 2011).

The Booker Washington Agricultural and Industrial Institute sent some of their students for four months of practical training at the Songhai Center. The University of Liberia (in Fendell) and Cuttington University (the main campus is located in Suakoko, Bong) are discussing using the center to provide practical agricultural training for university students. The Songhai Center Liberia is interested in working more with agricultural schools and providing an extended classroom for university student instruction and faculty research. One barrier to the collaboration remains the forty-mile travel distance to the center and the lack of resources on both parts (Duo, 2012).

Soil iron toxicity significantly hampers agricultural productivity. Research trials sponsored by Catholic Relief Services/Liberia are underway to identify rice varieties that are less susceptible. CARI collaborates with the International Institute for Tropical Agriculture (IITA), Ibadan, Nigeria, to procure cassava varieties that are suitable for the Liberian soils. CARI also conducts research on sweet potatoes, ginger, and peppers (Marshall, 2012).

The CSLI and its program participants face a set of challenges. There have not been consistent financial investments at the hub site. During the time of the site visit, the center recently sold much of their livestock from their animal production units at the conclusion of their training sessions to generate revenue. The lack of investment in the program is further exacerbated by the fact that Liberia is still rebuilding from a lengthy debilitating civil war, which brought widespread destruction of roads, bridges, schools, homes, buildings, electricity, and other physical infrastructure, while severely weakening Liberia's capacity to invest properly in agricultural growth and development. The investments needed to create economic opportunities for the agricultural sector are being restored slowly but most of the investments from public and donor support have been concentrated in and around the capital city.

Thus a major dichotomy continues to exist between urban and rural areas. These restrictions impact how the center operates and how successful the program graduates will be when they complete the program. Unlike the Benin site, CSLI has not been able to create income-generating activities outside of few value-added products processed on site (e.g., soap and palm oil). CSLI leadership needs to explore how the CSLI can create more opportunities to generate income on-site.

The staff also struggles to leverage market linkage support to program graduates as they embark on their farm business. Accessing and getting markets to work effectively is a significant challenge. Liberia is slowly transitioning from low-production subsistence farming

to more commercial enterprise economy. Restoring the transportation system (i.e., bridges, highways, farm-to-market roads), for example, will be instrumental to reinvigorating the agricultural sector and thus improving market access. Experience throughout Africa has shown that rural areas that have access to reasonably good roads will attract traders and buyers. Basic infrastructure needs like a stable source of electricity can act as barriers to progress in many rural areas like Bensonville, while also impeding the farmers' ability to properly store fresh produce. In addition to these basic infrastructure needs, investing in the marketing infrastructure is essential, particularly physical marketplaces, storage, and processing facilities for crops, livestock and fisheries, and energy.

Institutional and human support is very limited in rural areas; therefore, strengthening farm-based organizations to access services, improved storage, and processing facilities can benefit farmers and landowners. Farm-based organization can facilitate the mobilization of resources needed by individual producers. The research and technical support provided by CARI should be considered as well – particularly in training or helping farmers adopt new technologies like propagation and the use of high quality seeds or seedlings.

Farmers also need better access to capital. Credit is not readily available or not affordable for small farmers. Developing appropriate institutional arrangement to extend credit and other financial products to the rural sector, particularly agriculture, will be key.

CSLI has benefited from partnering with others as they pursue opportunities to review agricultural education and training. One example where public institutional support has benefitted CSLI is with the Food and Agriculture Organization (FAO) of the United Nations. FAO partnered with the government in Liberia to improve the knowledge and skills of youth in agriculture. FAO was instrumental in providing graduates from the CSLI with internship positions to work with farmers and partners in local villages and towns.

Conclusions and Future Expansion

The Songhai Center Model sets a novel paradigm for agricultural development in Africa. Because nearly two-thirds of the population in sub-Saharan Africa live in rural areas and are dependent on agriculture for their livelihood, the agriculture sector can play a critical role in long-term development and growth for most African countries as it has the best chance for reducing poverty.

The Songhai Centers function successfully as hubs for training, production, research, and development of sustainable agricultural practices as a means to create decent jobs for youth and women. The center also advocates the use of a hybrid mix of traditional and modern agricultural practices combined with management courses and communal responsibility to propel its graduates into agriculture. The centers also utilize new technologies such as computer laboratories, web access for the community, biogas and solar energy.

Scaling up the Songhai Model to West African countries will be a challenge because many African governments operate in an environment of scarce public resources. With limited government budgets for agriculture, it is not clear whether African countries have the adequate domestic resources that can be mobilized for agricultural development. Investments in transport infrastructure, extension services (via the university system and governmental research agency), alternative energy sources, information and communication technologies will be vital for agribusinesses to thrive.

Several factors have attributed to the success of the Songhai Centers. The centers are becoming increasingly known worldwide for providing economic development training and development for young people in sustainable agriculture. As an institution, Songhai has taken significant steps to generalize successful indigenous experiences in training setting and the establishment of satellite sites for graduates in different parts of the country has helped to facilitate continual transfer of information.

The Songhai Center has been recognized for being an innovative institution by the global community, particularly the United Nations and Economic Community of West Africa States (ECOWAS). Benin's peace and stability over the years have helped to reap democratic and development gains. In 2008, Songhai was promoted as a Center of Excellence for Africa by these two respective groups. Its decentralized development model is now being replicated in various countries in Africa, namely Burkina Faso, Cote d'Ivoire, Congo, Babon, Ghana, Guinea, Kenya, Liberia, Nigeria, Sierra Leone, Malawi, Togo, Zambia, and Uganda. First, this level of innovativeness is linked to the fact that they function as a technology park and as a production center where new ideas and techniques are developed and contextualized; then these ideas are further translated into different types of production activities and enterprises.

Another key component of the centers' innovation is the level of human development training they provide to program participants. Much of the human development training is transferable in other

settings/contexts. Songhai offers a rigorous but comprehensive training program that offers both classroom and hands-on instruction to participants on topics that range from agricultural production and value-added processing to communication and establishing markets. The Songhai Model adopts a holistic approach to agribusiness and entrepreneurship development, not only providing technical training but also social and financial supports that are needed in agricultural development.

It is notable that the bulk of their financial support has come from private investors in other countries or agencies/organizations with a global focus. Few governments in Africa prioritize agriculture in their policies as well as actual spending. Fan et al. (2009) acknowledge that overall public investments by most African governments in agriculture have been low compared to other sectors like education and defense. Using data from the International Monetary Fund's Government Finance Statistics, these authors found that the share of the national budget spent on agriculture between 1980 and 2005 was 5 to 7 percent compared to 12 to 18 percent for education and 8 to 14 percent for defense. In spite of limited public investments, the center in Benin has been able to leverage financial support as well as in-kind resources from external donor support under the guidance and leadership of Father Nzamujo. Father Nzamujo and his staff have been able to garner donor support by showcasing what they have done well. The Songhai Center's reputation as a model farm and training site has been based on solid achievements they have made in serving as educational center for young African agricultural entrepreneurs.

Although the Songhai Centers strive to be financially independent through the sale of their own products and internal generated funds, supporting documentation by the Songhai staff in Benin revealed that their small oasis of success would not have been made possible without external donor support from public and private institutions, non-governmental organizations, universities, and international donors like USAID and UNDP.

Songhai is a service center to the larger community. In some ways, the center has provided business and technical support to local residents in the form of distance-education, internet access, and other business services. For recent graduates, the center serves them by providing marketing, networking, financial/loan support, equipment and farm supplies, and other services that help young entrepreneurs succeed.

To some extent the centers have been successful in identifying and cultivating diversified partnerships from

different sectors (non-profit, government, and private). As seen in Benin and in Liberia, their common experiences stem from the use of local resources, the combined use of “indigenous” and modern agricultural methods, and highly varied national, regional, international partnerships. Another benefit is the use of their “model farms” in showcasing sustainable agricultural practices in a real context. Having the ability to showcase feasible alternative enterprises, sustainable production practices, and best management practices are all critical pieces of the program and make agricultural production adaptable for the learner.

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